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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,773	03/25/2004	Zbigniew Zurecki	06487 USA	7938

23543 7590 04/08/2008  
AIR PRODUCTS AND CHEMICALS, INC.  
PATENT DEPARTMENT  
7201 HAMILTON BOULEVARD  
ALLENTOWN, PA 181951501

EXAMINER
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DOERRLER, WILLIAM CHARLES

ART UNIT	PAPER NUMBER
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3744

MAIL DATE	DELIVERY MODE
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04/08/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/809,773

**Applicant(s)**

ZURECKI ET AL.

**Examiner**

William C. Doerrler

**Art Unit**

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2-20-2008, letter reopening prosecution.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 6, 9-22, 28-30, 33, 36-50 and 55-60 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 10-14, 37-41 and 55-60 is/are allowed.  
6) ☒ Claim(s) 1, 2, 6, 9, 15-22, 28, 29, 36 and 42-50 is/are rejected.  
7) ☒ Claim(s) 3, 30 and 33 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 29 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,2,6,9,15-22,28,29,36 and 42-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/60079 (Hong).

Hong discloses applicants' basic inventive concept, a system for spraying liquid coolant to a tool working on a workpiece, essentially as claimed with the exception of specifying the impingement angle on the tool or stating that the spray then impinges the workpiece with a spread angle. Line 18 of page 19 of Hong states that the opening is chosen to provide the "best spray" of the cryogenic coolant over the surface of cutting tool. This is seen as a result effective variable that one of ordinary skill in the art would test to derive

the most effective impingement angle. The spray of the tool to the workpiece is seen to happen inherently, as any fluid sprayed on any surface will produce spray at some spread angle (applicant has not claimed any specific spread angle). It is considered obvious to an ordinary practitioner in the art to test and modify the impingement angle of Hong to optimize the results of the device. Claims 16-22 and 43-50 are seen as product-by-process claims. The effects of maximizing the effects of Hong's cooling device will inherently carry over to effecting the workpiece. Applicants' claimed effects are seen as inherently occurring in a system that cuts the workpiece with the maximized impingement angle with the fluid than spraying onto the workpiece (with some spread angle). In regard to claims 19 and 46, the paragraph beginning on line 3 of page 22 states that the device of Hong may be used to machine titanium, steel, aluminum or PVC. The paragraph beginning on line 11 of page 25 states that the cryogenic cooling of the tool improves the surface finish of the workpiece. Applicant's surface finish claims are seen as merely quantifying what is taught in this paragraph.

***Allowable Subject Matter***

Claims 3,30 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10-14,37-41 and 55-60 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Doerrler whose telephone number is (571) 272-4807. The examiner can normally be reached on Monday-Friday 6:30-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

William C Doerler  
Primary Examiner  
Art Unit 3744

WCD

/William C Doerler/  
Primary Examiner, Art Unit 3744